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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/827,326

04/20/2004

Byoung-Deog Choi

1514.1040

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06/05/2006

STEIN, MCEWEN & BUI, LLP  
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WASHINGTON, DC 20005

EXAMINER

CRANE, SARA W

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

18

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/827,326		CHOI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Sara W. Crane		2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 7-15 and 20-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 16-19 and 31-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>21 Apr 2006</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

Applicant's election with traverse of claims 1-6, 16-19, and 31-33 in the reply filed on 21 March 2006 is acknowledged. The traversal is on the ground(s) that search and examination of both sets of claims would not be a serious burden. This is not found persuasive because there are two separately patentable concepts set forth in the two sets of claims (as noted in the previous Office action), each requiring its own search.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 16-19, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 465 961 (Miyazawa et al.) in view of JP 7-273340 (Egawa).

With respect to claim 1, figure 3 of Miyazawa et al. shows extraction of carriers generated by impact ionization (column 2, line 48) in a channel region of an active device, by applying a voltage to electrode 17, adjacent to bias supply layer 16. Carriers generated by impact would be "hot" because they would have more energy than normal carriers. The claim is anticipated, hence obvious. Alternatively, and in particular with respect to the electrode configuration recited in claims 3 and 5, the Egawa reference shows in figures 1 and 3 an extraction electrode 13 that is in contact with the underlying

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channel region, and separated entirely from source and drain areas. It would have been obvious to supply such an electrode configuration to extract the hot carriers of the Miyazawa device for the reasons noted in Egawa, i.e., to allow a substrate potential to be applied directly to the channel. With respect to claim 2, it would have been obvious to apply a source or drain voltage for extraction purposes, because such voltages are readily available on a chip, through power supply wiring lines. It would have been obvious to use these SOI transistors in a flat panel display, because this is a common use for SOI, where the advantages of SOI such as low cost are particularly relevant. Other claims not specifically discussed contain limitations that parallel those above, and would have been taught or obvious for the same reasons.

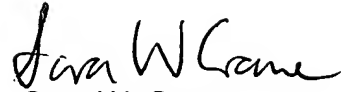
Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Crane, whose telephone number is (571) 272-1652.

The supervisor for Art Unit 2811, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Sara W. Crane  
Primary Examiner  
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